This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An invasive device (17) that is intended to be introduced into an object (7) that is to be imaged by means of an MRI apparatus, ~~which~~ said invasive device ~~has~~ comprising a distal end (18) and is provided with ~~an envelope~~ a housing (19) that ~~is connected thereto~~ extends to the distal end, with a circuit (20) that is arranged at the area of the distal end, and also with an electrical connection conductor (21) that is connected to the circuit and extends through the ~~envelope~~ housing, ~~characterized in that~~ the connection conductor (21) comprises mutually separated segments (22-i), each of which is shorter than a predetermined value, and that the separation between the segments is realized by way of frequency-dependent separating elements (23-i) constructed as cores (25, 26) wound on a carrier (24) in such a manner that magnetic fields generated by current in the cores (25, 26) compensate one another, said elements (23-i) ~~that~~ constitute a conductor for LF currents and an isolator for RF alternating current.

2. (Original) An invasive device as claimed in claim 1, wherein the predetermined value for the length of the segments (22-i) is less than 120 cm.

3. (Original) An invasive device as claimed in claim 2, wherein the predetermined value for the length of the segments (22-i) is less than 24 cm.

4. (Previously Presented) An invasive device as claimed in claim 1, wherein the separating elements are formed by self-inductances that do not contain a ferromagnetic material.

5. (Original) An invasive device as claimed in claim 4, wherein the self-inductances are formed in that the input core (25) and the output core (26) of the connection conductor (21) are wound so as to form bifilar coils.

6. (Currently Amended) An invasive device as claimed in claim 1, wherein the segments are formed by mutually ~~twisted~~ twisting the cores (25, 26).

7. (Previously Presented) An invasive device as claimed in claim 4, wherein the self-inductances have a value of at the most 1 μH.

8. (Currently Amended) An MRI apparatus that is arranged to co-operate with the invasive device as claimed in claim 1, ~~characterized in that~~ the apparatus is provided with a power supply unit (16) for applying electrical energy to the circuit (20)

via the connection conductor (21), and with switching means for interrupting the supply of electrical energy to the circuit as desired.

9. (Original) An MRI apparatus as claimed in claim 8, wherein the switching means are arranged to interrupt the supply of electrical energy to the circuit in response to an execution signal for the execution of an MRI exposure by means of the MRI apparatus.